I. Project Title: **Database Management Program and Interagency Standardized Monitoring Program.**

II. Principal Investigator(s):

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III. Project Summary:

Development of a centralized database was a requirement of the Recovery Program when it was formed in 1986. All researchers who receive funding through the Recovery Program are required to submit all fishery data to the central database at the completion of their study. In addition, all researchers are required to submit a complete list of all endangered fish handled each year to the central database. Guidelines for the annual tagging list are circulated to researchers each year. A consolidated tagging list is compiled and distributed after tagging data are received from all researchers.

Most of the UCRB database consists of the 'all fish' data collected during the different investigations funded by the Recovery Program. These data relate to species, number, collection date, site, gear, effort expended, habitat and any other parameter associated with collection of that fish. Only field fish-collection data or radiotelemetry data are required to be submitted. The Recovery Program does not require submitting data from invertebrate, geomorphology, hatchery or laboratory studies. All fishery data associated with a study are due to the database when the final report is approved by the Recovery Program.

All data are stored in individual dBASE files according to project and year(s) of collection. Data are not combined into one large database because of the wide variety of studies and study designs used. A list of field names and data codes has been prepared to guide database development. Investigators who use dBASE and field names and codes from the list do not need to provide any further documentation about the data file. However, any fields not described in the List of Field Names must be fully documented when the file is submitted. Because of the wide variety of study designs file structures vary widely, but all data of the same type are contained in

fields with the same name and structure (e. g. the river where sampling occurred is identified by the same two-digit code in a field named 'RIVER'). Investigators may also submit their data as delimited ASCII files or spreadsheet files. However, these files must contain only raw data aligned in rows and columns suitable for importing into dBASE or another database program. The data codes or numeric format must conform to the list of codes mentioned above. Investigators must also submit complete documentation describing the contents of the file.

The database manager checks each file to ensure that the data conform to the required format and prepares one page of documentation for each file received. The documentation includes name of principal contact, river where data were collected, year of data collection, a brief summary of the study design, description of the data file itself (i.e. field names and description of contents, data codes, etc), and a list of the major reports or publications that are associated with the data file. Future users will be referred to the reports for a complete description of the study design and conclusions of the original researchers.

The database manager also distributes PIT tags to researchers as they request them and maintains a list of all tags and who they are distributed to. PIT tag lists submitted by researchers are compared with this database to identify transcription errors. All errors can not be corrected, but at least a few errors can be eliminated before they are included in the basin-wide tagging list. Other errors are corrected when they are identified.

The Interagency Standardized Monitoring Program (ISMP) was developed in 1986 to monitor population trends of Colorado pikeminnow and humpback chub in the Colorado River Basin. The original ISMP was composed of three parts: 1) spring electrofishing for subadult and adult Colorado pikeminnow in parts of the Green, Colorado, White and Yampa rivers (about 20 -30% of occupied habitat within each of the rivers); 2) autumn backwater seining for YOY Colorado pikeminnow in the Colorado and Green rivers; and 3) sampling for adult humpback chubs with trammel nets in Black Rocks and Westwater Canyon.

ISMP has undergone substantial changes since its beginning and is currently considerably reduced from the early program. Humpback chub and adult Colorado pikeminnow monitoring have been eliminated and replaced with more intensive mark-recapture population estimates. Fall sampling for YOY Colorado pikeminnow is the only remaining component of the original program. ISMP was originally funded under a separate scope of work, but the data maintenance portion of the reduced program has been consolidated with the overall data program.

IV. Study Schedule: Scheduled to continue for the length of the Recovery Program.

V. Relationship to RIPRAP: General Recovery Program Support Action Plan.

V. Monitor populations and habitat and conduct research to support recovery actions (research, monitoring, and data management).
V.A.1. Conduct standardized monitoring program.
V.A.2. Conduct interagency data management program to compile, manage, and maintain, all research and monitoring data collected by the Recovery Program.

VI. Accomplishment of FY 01 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Database Management

PIT tags have been distributed as researchers and hatchery managers have requested them.

The Colorado pikeminnow and razorback sucker tagging lists were updated through 2000. The chub tagging list is updated through 1998 and will be updated through the present as soon as field workers finish with compiling tagging lists associated with work population estimates. Data on fish tagged during 2001 will be submitted by researchers this winter and added to the lists.

All PIT tag numbers received were checked for possible errors by comparing the list of incoming PIT tag numbers with a list of all PIT tags issued. Several minor errors were found and clarified with the original investigators. In the past, the only checking done was to check validity of PIT tag numbers. Beginning in 2000, checks were made on major codes included with the data to ensure consistency with established guidelines. A few inconsistencies were found and corrected. However, by and large the tagging data submitted by researchers is in very good shape when received for inclusion in the data base.

Although the data are checked as they are entered into the database, some errors can not be detected until someone works directly with the data. Several problems were detected by researchers working with the data, including some possibly missing data. After considerable checking with different researchers, it was discovered that two small data sets had been inadvertently excluded when data were submitted. Those data will be added to the 2001 version of the tagging lists. There are undoubtedly other small amounts of data that might still remain to be submitted.

A reminder that 2001 PIT-tagging data are due will be sent to all researchers in December.

Interagency Standardized Monitoring Program.

Field work for the adult portion of the original standardized sampling program ended in FY 2000. Data were consolidated into a final version of the database. Final data analysis was done and a final report for that portion of ISMP was prepared. That report is in the final stages of preparation and will be submitted to the Recovery Program for review. Final figures for the four rivers sampled during the monitoring program are in attachment 1 of this document.

YOY Colorado pikeminnow data was consolidated from all participants and a draft summary report for 2000 was circulated to investigators. A final version will be provided to the Recovery Program in the near future.

2001 was the first year that the Fish and Wildlife Service collected YOY Colorado pikeminnow monitoring data in the Colorado River within Colorado. Data had previously been collected by CDOW. Samples were taken in mid September, preserved specimens were sent to the Larval Fish Laboratory, Colorado State University for analysis.

VII. Recommendations: Continue the database program. The Interagency Standardized Monitoring Program has been revised dramatically and is still in a state of flux.

VIII. Project Status: Project is on track. Scheduled to continue through the length of the Recovery Program.

IX. FY 01 Budget

A.	Funds Provided:	63.2 K
B.	Funds Expended:	63.2 K
C.	Difference:	0
D.	Publication Charges:	0

X. Status of Data Submission: Samples collected for YOY Colorado pikeminnow monitoring have been submitted to the Larval Fish Laboratory for identification. Data will be added to the database when identification is completed.

XI. Signed: C.W. McAda, December 10, 2001

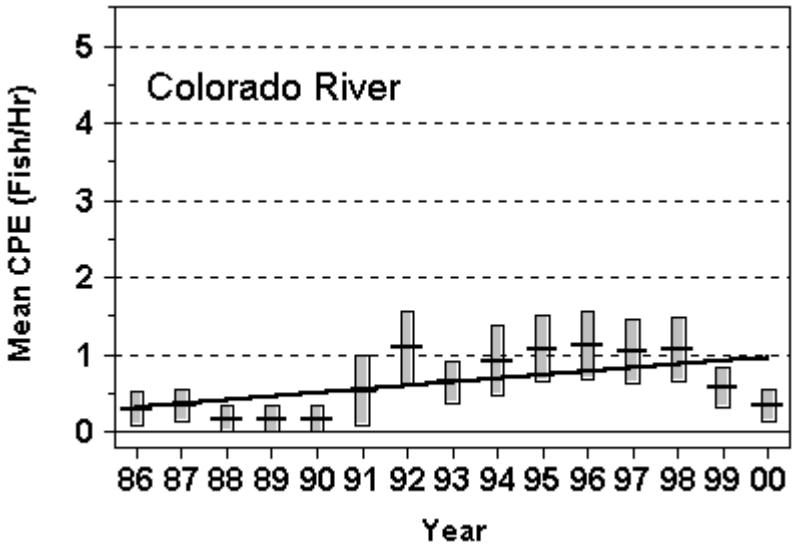

Figure 1. Mean CPE (fish/hour of electrofishing) for subadult and adult Colorado pikeminnow in the Colorado River during spring electrofishing conducted during the Interagency Standardized Monitoring Program, 1986 – 2000. Bars represent ±95% confidence intervals; the slope of a regression line through mean values was significantly greater than 0 ($P \leq 0.05$).

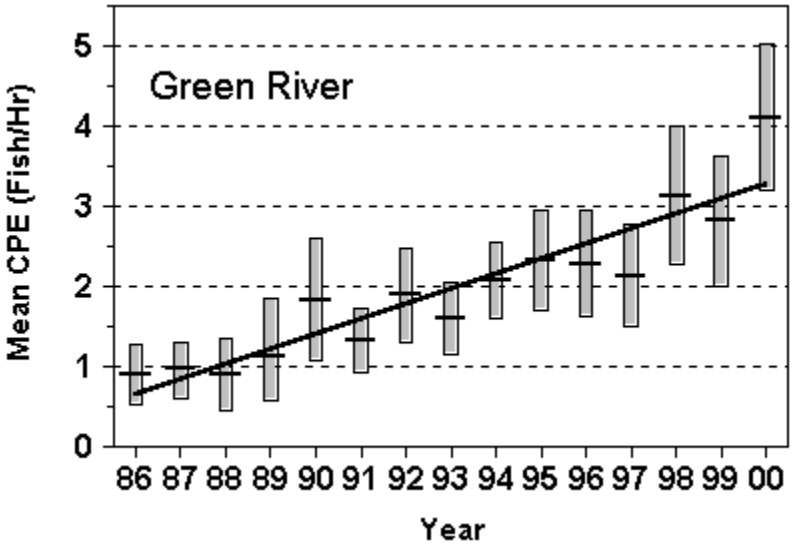

Figure 2. Mean CPE (fish/hour of electrofishing) for subadult and adult Colorado pikeminnow in the Green River during spring electrofishing conducted during the Interagency Standardized Monitoring Program, 1986 – 2000. Bars represent ±95% confidence intervals; the slope of a regression line through mean values was significantly greater than 0 ($P \leq 0.05$).

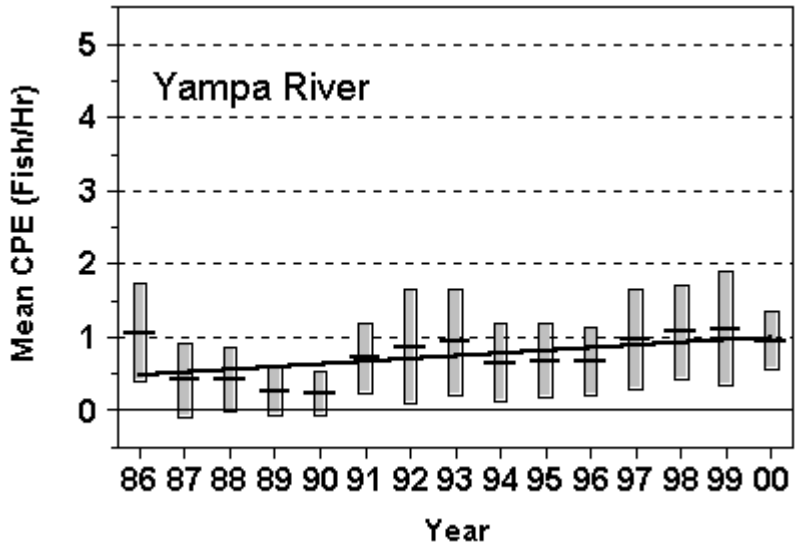

Figure 3. Mean CPE (fish/hour of electrofishing) for subadult and adult Colorado pikeminnow in the Yampa River during spring electrofishing conducted during the Interagency Standardized Monitoring Program, 1986 – 2000. Bars represent ±95% confidence intervals; the slope of a regression line through mean values was significantly greater than 0 ($P \leq 0.05$).

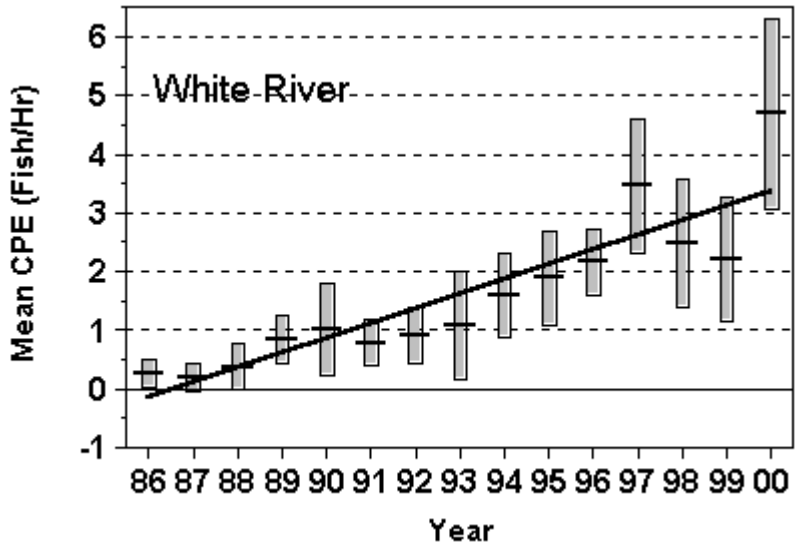

Figure 4. Mean CPE (fish/hour of electrofishing) for subadult and adult Colorado pikeminnow in the White River during spring electrofishing conducted during the Interagency Standardized Monitoring Program, 1986 – 2000. Bars represent ±95% confidence intervals; the slope of a regression line through mean values was significantly greater than 0 ($P \leq 0.05$).